REMARKS

Favorable reconsideration of the above-identified application is respectfully requested in view of the following remarks.

Claims 1-7 and 15-18 remain canceled and Claims 19-25 have been newly added. Thus, Claims 8-14 and 19-25 are currently pending in this application, with Claims 8 and 19 being the only independent claims.

One aspect of the present invention is generally directed to a method of manufacturing a rigid internal gear of a wave gear device comprising a number of features including forming the main gear ring from a first material that has a low linear expansion coefficient, and forming a tooth-forming ring from a second material that has a high linear expansion coefficient. These features are recited in Claim 8.

The Official Action rejects Claim 8 under 35 U.S.C. §103(b) as being unpatentable over U.S. Patent No. 6,082,222 to *Kiyosawa et al.* in view of U.S. Patent No. 5,519,182 to *Linzell*, and alternatively, further in view of either U.S. Patent No. 4,663,813 to *Carlson*, U.S. Patent 3,239,699 to *Ferrary*, or U.S. Patent No. 1,347,671 to *Belshaw*.

Kiyosawa et al. discloses a rigid internal gear of a wave gear drive having a gear body member 14 and a tooth-formed member 16 integrally connected with each other in a condition so that the tooth-formed member 16 is inserted into a circular inner circumferential surface of the gear body member 14. The gear body member 14 is made of light-weight material such as aluminum alloy or the like and is integrally connected to the tooth-formed member 16 made of a heavy material having a high strength and wear resistance such as ferrous or copper material. A circular flexible external gear 20 is positioned inside the tooth-formed member 16,

and a wave generator 22 deforms the flexible external gear 20 radialley to partially engage it with the rigid tooth-formed member 16. As the wave generator 22 operates it heats and expands thereby increasing the radial pressure between the flexible external gear 20 and the tooth-formed member 16. To alleviate this pressure, the gear body member 14 is made of aluminum alloy having a higher thermal expansion coefficient than that of the wave generator made of ferrous material.

The Official Action takes the position that the gear body member 14 and the tooth-formed member 16 disclosed in *Kiyosawa et al.* disclose a main gear ring having a low linear expansion coefficient and a tooth-forming ring disposed inside the main gear ring having a high linear expansion coefficient. However, the Official Action only points out that the gear body member 14 disclosed is made of a light-weight material such as aluminum alloy and the tooth-formed member 16 disclosed is made of a heavy material such a ferrous or copper. The Official Action fails to point out how *Kiyosawa et al.* discloses that the aluminum alloy forming the gear body member 14 has a high linear expansion coefficient and the ferrous or copper material forming the tooth-formed member 16 has a low linear expansion coefficient.

The Examiner is reminded that the Patent Office bears the burden of providing "some suggestion of doing what the inventor has done," see MPEP 2142, and that the mere capability of a reference to be hypothetically configured in the manner of the present invention, absent further suggestion to do such, does not satisfy this burden. There is no suggestion in *Kiyosawa et al.* that a main gear ring formed from a first material having a low linear expansion coefficient should be used

in combination with a tooth-forming ring made from a second material having a high linear expansion coefficient together with the other features as recited in Claim 8.

The Official Action does not point out how *Kiyosawa et al.* discloses or suggests that the linear expansion coefficient of aluminum is lower than that of ferrous material of copper alloy. However, it should be noted that aluminum alloys can have a wide range of linear expansion coefficients, ranging from at least $6.2x10^{-6}$ to $24x10^{-6}$ (see Claim 11 of the present application), which range encompasses values of coefficients that may be found for ferrous materials (e.g., $12x10^{-6}$) or copper alloys (e.g., $17\text{-}18x10^{-6}$). Thus, there is no teaching that the coefficient of the aluminum alloy of *Kiyosawa et al.* is lower than that of the ferrous materials or copper alloys of *Kiyosawa et al.* Should this rejection be maintained, it is respectfully requested that it be pointed out how *Kiyosawa et al.* discloses that the linear expansion coefficient of the aluminum alloy used in *Kiyosawa et al.* has a low linear expansion coefficient and the ferrous material or copper alloy has a high linear expansion coefficient or that the rejection be withdrawn.

Further, even if it was somehow disclosed that aluminum alloy could have a low linear expansion coefficient and that the ferrous material or copper alloy could be high, in column 3, lines 20-28 *Kiyosawa et al.* discloses that the coefficient of thermal expansion of the aluminum gear body member 14 is larger than that of the wave generator 22 made of ferrous material. The gear body member 14 has a larger coefficient of thermal expansion so that when the inner part of the wave generator becomes hot and expands thereby increasing the pressure between the flexible external gear 20 and the tooth-formed member 16, the circular internal gear 10 (the tooth-formed member 16 and the gear body member 14) expand at a greater rate

than the wave generator thereby lessening the tightening of meshing between flexible external gear 20 and the tooth-formed member 16. Thus, it would not have been suggested to one skilled in the art to configure *Kiyosawa et al.'s* wave gear so that the gear body member 14 is made of aluminum having a low linear coefficient and the tooth-forming member 16 is made of ferrous material or copper alloy having a high linear expansion coefficient.

Thus, *Kiyosawa et al.* does not disclose the feature of the present invention directed to a main gear ring being made of a first material having a low linear expansion coefficient and a tooth-forming ring being made of a second material having a high linear expansion coefficient.

Claim 19 is newly added and similar to Claim 8 except that it recites that the linear expansion coefficient of the tooth-forming ring is higher than the linear expansion coefficient of the main gear ring. For the same reasons set forth above, *Kiyosawa et al.* does not disclose at least this feature and Claim 19 is allowable.

For at least the reasons stated above, independent Claims 8 and 19 are allowable. Also, Claims 9-14 and 20-25 are allowable at least by virtue of their dependence upon independent Claims 8 and 19, respectively.

Thus, it is respectfully requested that all the claim rejections be withdrawn and that this application be allowed in a timely fashion.

Should any questions arise in connection with the application, or should the Examiner believe that a teleconference with the undersigned would be helpful in resolving any remaining issues pertaining to this application, the undersign respectfully requests that he be contact at the number indicated below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

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By: William C Rowland
William C. Rowland
Registration No. 30,888

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620